

WE CLAIM:

1. A method of detecting the validity of configuration data for a computer system, the method comprising:

detecting a layout of present configuration data, the present configuration data being stored in a memory device in the computer system;

detecting a layout of updated configuration data, the updated configuration data being contained within program code comprising an updated configuration for the computer system;

comparing the layout of the present configuration data to the layout of the updated configuration data;

if the layout of the present configuration data matches the layout of the updated configuration data, then determining that the present configuration data is valid;
and

if the layout of the present configuration data does not match the layout of the updated configuration data, then determining that the present configuration data is invalid.

2. The method of claim 1, further comprising resetting the present configuration data to a default state after determining that the present configuration data is invalid.

3. The method of claim 1, wherein detecting a layout of present configuration data comprises detecting a first numerical value representing the layout of the present configuration data.

4. The method of claim 3, wherein the first numerical value is stored in the memory device in the computer system.

5. The method of claim 3, wherein the first numerical value is determined by computing a hash value from at least one data record in the layout of the present configuration data, wherein each data record comprises a pointer and a map position, the map position including the location of the at least one data record in the memory device.

6. The method of claim 5, wherein detecting a layout of present configuration data further comprises retrieving the layout of the present configuration data from the computer system prior to determining the first numerical value.

7. The method of claim 1, wherein detecting a layout of updated configuration data comprises detecting a second numerical value representing the layout of the updated configuration data.

8. The method of claim 7, wherein the second numerical value is stored in the program code comprising an updated configuration for the computer system.

9. The method of claim 7, wherein the second numerical value is determined by computing a hash value from at least one data record in the layout of the updated configuration data, wherein each data record comprises a pointer and a map position, the map position including the location of the at least one data record in the updated configuration data.

10. The method of claim 3, wherein the first numerical value comprises a first checksum value.

11. The method of claim 7, wherein the second numerical value comprises a second checksum value.

12. The method of claim 1, wherein the memory device is a non-volatile random access memory (NVRAM) device in the computer system.

13. The method of claim 12, wherein the NVRAM device is a complementary metal oxide semiconductor (CMOS) chip in the computer system.

14. The method of claim 1, wherein the program code is a basic input/output system (BIOS) code in the computer system.

15. A computer-readable medium having computer-executable instructions for performing the method of claim 1.

16. A computer system for detecting the validity of computer configuration data, the system comprising:

- a first memory device for storing a program for detecting the validity of present configuration data stored in the computer system and for storing program code including updated configuration data for the computer system;

- a second memory device for storing the present configuration data; and

- a processor, functionally coupled to the first and second memory devices, the processor being responsive to computer-executable instructions contained in the program and operative to:

- detect a layout of the present configuration data;

- detect a layout of the updated configuration data;

- compare the layout of the present configuration data to the layout of the updated configuration data;

- if the layout of the present configuration data matches the layout of the updated configuration data, then determine that the present configuration data is valid; and

- if the layout of the present configuration data does not match the layout of the updated configuration data, then:

determine that the present configuration data is invalid;
and
reset the present configuration data to a default state.

17. The system of claim 16, wherein the processor is operative to detect a layout of the present configuration data by detecting a first numerical value representing the layout of the present configuration data.

18. The system of claim 17, wherein the first numerical value is stored in the second memory device in the computer system.

19. The system of claim 17, wherein the processor determines the first numerical value by computing a hash value from at least one data record in the layout of the present configuration data, wherein each data record comprises a pointer and a map position, the map position including the location of the at least one data record in the second memory device.

20. The system of claim 17, wherein the processor in detecting the layout of the present configuration data, is further operative to retrieve the layout of the present configuration data prior to determining the first numerical value.

21. The system of claim 16, wherein the processor is operative to detect a layout of the updated configuration data by detecting a second numerical value representing the layout of the updated configuration data.

22. The system of claim 21, wherein the second numerical value is stored in the updated program code for updating the computer system.

23. The system of claim 21, wherein processor is operative to determine the second numerical value by computing a hash value from at least one data record in the

layout of the updated configuration data, wherein each data record comprises a pointer and a map position, the map position including the location of the at least one data record in the updated configuration data.

24. The system of claim 17, wherein the first numerical value comprises a first checksum value.

25. The system of claim 21, wherein the second numerical value comprises a second checksum value.

26. The system of claim 16, wherein the second memory device is a non-volatile random access memory (NVRAM) device in the computer system.

27. The system of claim 26, wherein the NVRAM device is a complementary metal oxide semiconductor (CMOS) chip in the computer system.

28. A method of recovering configuration data for a plurality of components in a computer system, the method comprising:

- (a) selecting one of the plurality of components as a current component;
- (b) retrieving a first map location in a memory device of the computer system, the first map location representing the location of present configuration data for the current component;
- (c) retrieving a second map location in the memory device of the computer system, the second map location representing the location of updated configuration data for the current component;
- (d) determining whether the first map location is the same as the second map location for the current component;

(e) if the first map location matches the second map location for the current component, then selecting the next component in the plurality of components as the current component;

(f) if the first map location does not match the second map location for the current component, then:

copying the present configuration data to the second map location in the memory device;

erasing the present configuration data from the first map location in the memory device; and

selecting the next component in the plurality of components as the current component; and

(g) repeating the operations (b)-(f) for each of the plurality of components in the computer system.

29. The method of claim 28, wherein the present configuration data for the current component comprises a current setup value for the current component in the computer system.

30. The method of claim 29, wherein copying the present configuration data to the second map location in the memory device comprises copying the current setup value for the current component to the second map location in the memory device.

31. The method of claim 28, wherein retrieving a first map location in a memory device of the computer system comprises:

retrieving a current layout from the computer system, the current layout comprising a map location of the present configuration data for each of the plurality of components; and

retrieving the first map location from the current layout.

32. The method of claim 28, wherein retrieving a second map location in the memory device of the computer system comprises:

retrieving an updated layout from updated program code stored in the computer system, the updated layout comprising a map location of the updated configuration data for each of the plurality of components; and

retrieving the second map location from the updated layout.

33. A computer-readable medium having computer-executable instructions for performing the method of claim 28.